

**Commonwealth of Kentucky**  
**Division for Air Quality**

**PERMIT APPLICATION SUMMARY FORM**

Completed by: Sean Alteri

GENERAL INFORMATION:

Name:	IMCO Recycling, Inc.
Address:	1 IMCO Drive, Morgantown, Kentucky, 42261
Date application received:	July 1, 1999
SIC/Source description:	3341/Metal Industries
AFS Plant ID:	21-031-00033
Application log number:	G176
Permit number:	V-00-026

APPLICATION TYPE/PERMIT ACTIVITY:

<input checked="" type="checkbox"/> Initial issuance	<input type="checkbox"/> General permit
<input type="checkbox"/> Permit modification	<input type="checkbox"/> Conditional major
__Administrative	<input checked="" type="checkbox"/> Title V
__Minor	<input type="checkbox"/> Synthetic minor
__Significant	<input type="checkbox"/> Operating
<input type="checkbox"/> Permit renewal	<input checked="" type="checkbox"/> Construction/operating

COMPLIANCE SUMMARY:

<input type="checkbox"/> Source is out of compliance	<input type="checkbox"/> Compliance schedule included
<input checked="" type="checkbox"/> Compliance certification signed	

APPLICABLE REQUIREMENTS LIST:

<input type="checkbox"/> NSR	<input type="checkbox"/> NSPS	<input type="checkbox"/> SIP
<input type="checkbox"/> PSD	<input checked="" type="checkbox"/> NESHAPS	<input type="checkbox"/> Other
<input type="checkbox"/> Netted out of PSD/NSR	<input type="checkbox"/> Not major modification per 401 KAR 51:017, 1(2)(b) or 51:052,1(14)(b)	

MISCELLANEOUS:

- ☐ Acid rain source
- ☐ Source subject to 112(r)
- ☐ Source applied for federally enforceable emissions cap
- ☐ Source provided terms for alternative operating scenarios
- ☒ Source subject to a MACT standard
- ☐ Source requested case-by-case 112(g) or (j) determination
- ☐ Application proposes new control technology
- ☒ Certified by responsible official
- ☒ Diagrams or drawings included
- ☐ Confidential business information (CBI) submitted in application
- ☐ Pollution Prevention Measures
- ☐ Area is non-attainment (list pollutants):

#### EMISSIONS SUMMARY:

Pollutant	Actual (tpy)	Potential (tpy)
PM	67.34	67.34
SO <sub>2</sub>	0.419	0.419
NO <sub>x</sub>	72.0	72.0
CO	60.5	60.5
VOC	3.94	3.94
HCl (CAS# 7647-01-0)	112.84	112.84*
*Set by MACT requirements		

#### SOURCE PROCESS DESCRIPTION:

IMCO Recycling, Inc. owns and operates a secondary aluminum plant, a salt cake processing facility, and a proprietary residual landfill for disposal of salt cake on a 451-acre tract of land located approximately one mile west of Morgantown, Kentucky. The raw materials processed consist of various types of scrap aluminum, including both coated and uncoated aluminum coil, dross from primary aluminum production, used beverage cans (UBCs), scrap siding, and miscellaneous aluminum scrap types. IMCO Recycling, Inc. is subject to requirements set forth in the MACT (Maximum available control technology) standard for the secondary aluminum industry, 40 CFR 63, Subpart RRR. All affected sources and emission units are existing except for a reverberatory furnace which has not been constructed. The existing facilities have until March 24, 2003 to comply with Subpart RRR. The reverberatory furnace shall comply with Subpart RRR upon startup. All existing affected facilities shall comply with current requirements until compliance with Subpart RRR is required.

The UBCs, coated aluminum scrap, and miscellaneous scrap require processing, shredding and delacquering, prior to being charged to the rotary or reverberatory furnaces. UBCs are the primary feedstock for the reverberatory furnaces. The UBCs are usually received in bales and are stored in the concrete storage yard. The bales are transported to the shredder by forklift. The UBC bales are processed by the shredder, and the shreds are transported to the delacquer furnace by an overhead conveyor. The delacquering furnace burns and removes the paint on the shreds that are then fed directly to the reverberatory furnaces. Coated scrap aluminum siding is processed in the same manner.

IMCO Recycling utilizes six rotary furnaces to melt aluminum scrap in a batch process. After charging, the scrap is covered with a salt flux (NaCl or KCl) to reduce oxidation and a small quantity (<2%) of cryolite (NaAlF<sub>6</sub>) is added to improve coalescence of molten metal. The rotary furnaces are paired and exhaust gases are ducted to pass through one of three five-module lime-injected baghouses where the fine particles are removed and gases are neutralized. Particulates are collected for offsite disposal. Furnace baghouses are equipped with primary and secondary air exchangers for reducing the flue gas temperature at the baghouse to less than 250°F. Particle removal efficiency of the furnace baghouses is 97%. IMCO has installed five-module baghouses on the rotary furnaces

in order to allow individual modules to be removed from service for maintenance without unacceptably reducing baghouse performance.

IMCO Recycling, Inc. also uses reverberatory furnaces to continuously melt aluminum scrap. The molten aluminum is either poured into molds and allowed to cool to form ingots or tapped into crucibles mounted on flatbed trailers for molten delivery to customers. The crucibles are pre-heated with crucible heaters rated at 2.1 MMBTU/hr.

The salt cake (spent flux and oxides) is periodically removed from furnaces and transported to the Mud Building, where it is allowed to cool. After cooling the salt cake is loaded into trucks and hauled to the salt cake processing facility to recover additional particulate aluminum which is returned to the furnaces for re-processing.

IMCO received a construction permit for the salt cake processing facility in 1995. This facility was constructed and in operation by late 1995. This plant processes salt cake generated at Morgantown, as well as salt cake generated by other IMCO facilities. The salt cake processing facility has the capability of processing 300,000 tons of salt cake annually. The recovered aluminum is returned to the furnaces for reprocessing.

IMCO owns and operates a permitted residual landfill for the disposal of salt cake generated by the salt cake processing facility. This landfill generates fugitive ammonia and particulate emissions. The ammonia emissions result from the hydration of the salt cake. Once wet, the salt cake generates an estimated 130 tons per year of ammonia fugitive emissions from the landfill.

Other emission sources at IMCO's Morgantown facility include the crucible cleaning station, transporting aluminum to the storage bins and storage yard, haul roads, and the salt cake cooling area.